



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,885	07/10/2008	Yasuhiro Sakaguchi	062771	7627
38834	7590	04/01/2011		
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP			EXAMINER	
1250 CONNECTICUT AVENUE, NW				YEE, DEBORAH
SUITE 700			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20036			1733	
			NOTIFICATION DATE	DELIVERY MODE
			04/01/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No.	Applicant(s)
	10/585,885	SAKAGUCHI ET AL.
	Examiner	Art Unit
	Deborah Yee	1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 17 March 2011.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5 and 7-14 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5 and 7-14 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 12 July 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 to 5, 7 and 9 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over European patent 530725 to Kato et al. (hereafter "Kato") cited by Applicants in IDS filed October 3, 2007.

3. Kato in claims 1 to 4 discloses an austenitic stainless steel alloy composition having constituents whose wt% ranges overlap those recited by instant claims 2 and 3 as shown in table below; and such overlap in alloy wt% ranges establishes a prima facie case of obviousness because it would be obvious for one skilled in the art to select the instant claimed alloy wt% ranges over the broader disclosure of the cited art since the cited art teaches the same utility as the present invention to use as a nuclear reactor component, see MPEP 2144.05(I).

Element	Instant Claims 2-3 (mass percent)	Kato (mass percent)	Overlap (mass percent)
C	0-0.03	0.001-0.008	0.001-0.008
Si	0-0.02	0-1	0-0.02
Mn	0-0.85	0-2	0-0.85
P	0-0.03	0.002-0.003	0.002-0.003
S	0-0.002	0.002-0.003	0.002-0.003
Ni	11-26	8-15	11-15
Cr	17-30	15-22	17-22
Mo	0-3	0-3	0-3
N	0-0.003	0.001-0.10	0.001-0.003

Art Unit: 1733

Ca	0-0.001	-	-
Mg	0-0.001	-	-
O	0-0.004	-	-
Zr, B, Hf, V, Ti, Ta, Nb	Zr, B and/or Hf :0-0.01	Zr: >0.2-1.14 Hf: >0.2-2.24 V: >0.20-0.64 Ti: >0.2-0.6 Ta: >0.5-2.27 and/or Nb: >0.5-1.17	Zr and Hf are optional and can be omitted such that overlap is zero
Fe	balance		balance

4. The steel of Kato contains Zr, Hf, V, Ti, Ta and/or Nb whereas instant claim 3 requires up to 0.01% Zr, B and/or Hf. Nevertheless, >0.2-1.14% Zr or >0.2-2.24 % Hf are taught as optional elements in Kato and therefore can be omitted. In addition the other elements, V, Ti, Ta and/or Nb in Kato's steel are not excluded by the recitation "containing" of instant claim 3 which opens claim to non-recited elements, even in major amounts, see MPEP 2111.03.

5. More specifically, Kato discloses austenitic stainless steel Nos. 1, 2 and 6 in table 1 on page 5 and steel No. 11 in table 2 on page 7 that closely meet the composition in claims 2 and 3 and provisos in claims 4 and 5 of present application.

6. For instance, steel No.1 contains 0.003%C - 0.01% Si-1.65%Mn- 0.002%P- 0.003%S-13.9%Ni-17.7%Cr-2.2%Mo-0.017%Al-0.002%N-0.0131%O- Fe balance; and when calculated satisfies the claimed provisos as follows:

$$\text{Cr Equivalent} = 17.7 + 2.2 + (1.5 \times 0.01) + (0.5 \times 0) = 19.9$$

$$\text{Ni Equivalent} = 13.9 + (30 \times 0.003) + (30 \times 0.002) + (0.5 \times 1.65) = 14.875$$

$$\text{Cr equivalent} - \text{Ni equivalent} = 19.9 - 14.875 = 5.025 \text{ within } -5 \text{ to } +7 \text{ of claim 4}$$

$$\text{Cr equivalent/Ni equivalent} = 19.9 / 14.875 = 1.34 \text{ within } 0.7 \text{ to } 1.4 \text{ of claim 5}$$

Note Cr and Ni equivalent equations are disclosed in paragraph [0013] of instant specification.

7. Although steel of Kato contains about 1.65% Mn whereas instant claims 2 and 3 require 0.85% Mn or less, such difference would not a patentable merit. Note it would be obvious for one skilled in the art to modify example by reducing or omitting Mn since Kato teaches a Mn range of 0-2% in the general composition and further teaches if Mn is not added, the steel can still be used as a material component for a nuclear reactor, see lines 51-55 on page 3.

8. In regard to claims 2 and 3, cited steel does not contain Ca, Mg, O, or B and therefore either absent or at an inevitable impurity level, and therefore closely satisfy instant claimed wt% ranges.

9. Although Kato does not teach compositional formulas recited by instant claims, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357,553 O.G. 177., 57 USPQ 1 17, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F (2) 878, 1931 C.D. 75.

10. Also in last paragraph on page 5 of Kato, steel is subjected to solution heat treatment at 1050°C, and therefore meets solution heat treatment at a temperature of 1000°C to 1150°C set forth by instant claim 7.

11. Moreover, on lines 1-5 on page 2 of Kato, steel is use to make structural components for nuclear power plants of light-water reactors, and therefore meets structural limitation set forth by instant claims 9 to 12.

12. Claims 1 to 5, 7 and 9 to 12 are rejected under 35 U.S.C. 103 (a) as being unpatentable over US Patent 3,563,728 to Allio et al. (hereafter Allio") alone or in view of European patents 530725 to Kato et al. (hereafter "Kato").

13. Allio in claim 2 of columns 5-6 teach an austenitic stainless steel alloy composition having constituents whose wt% ranges overlap those recited by instant claims 1 to 3 as shown in table below; and such overlap in alloy wt% ranges establishes a prima facie case of obviousness because it would be obvious for one skilled in the art to select the instant claimed alloy wt% ranges over the broader disclosure of cited art since the cited art teaches the same utility as the present invention to use as structural components for a light-water nuclear reactor, see MPEP 2144.05 (I).

Element	Instant Claims 1-3 (mass percent)	Allio (mass percent)	Overlap (mass percent)
C	0-0.03	0.007-0.015	0.007-0.015
Si	0-0.02	0-0.5	0-0.02
Mn	0-0.85	0-1.5	0-0.85
P	0-0.03	0-0.05	0-0.03
S	0-0.002	0-0.05	0-0.002
Ni	11-26	17-22	17-22
Cr	17-30	14-19	17-19
Mo	0-3.0	0-0.05	0-0.05
N	0-0.003	0-0.015	0-0.003
Ca	0-0.001	-	-
Mg	0-0.001	-	-
O	0-0.004	-	-
Zr,B,Hf	0-0.01	-	-
Fe	balance	balance	balance

14. In regard to claims 2 and 3, cited steel does not contain Ca, Mg, O, Zr, B and Hf and therefore either absent or at an inevitable impurity level, and therefore closely satisfy instant claimed wt% ranges.

15. More specifically, example in table 1 of column 3 of Allio comprises 16.55%Cr-20.55%Ni-0.009%C-0.009%N-0.007%Mn-0.06%Si-0.004%P-0.002%S-0.04%Mo-0.0008%Ti-Fe balance that closely meets the claimed composition except for 16.55%Cr (outside the claimed Cr range of 17 to 30%), 0.06%Si (outside the claimed Si range of 0.02% or less Si), and 0.009% N (outside the claimed N range of 0.003% or less). Nonetheless, it would well within the skill of the artisan to modify cited example by raising the concentration of Cr to 17% and lowering the Si and N to less than 0.02% and 0.003% respectively since a broad range of 14-19% Cr, 0 - 0.5% Si and 0 - 0.015% N are taught in the general composition. Also when calculated, cited example meets the claimed provisos set forth by instant claims 1, 4 and 5 as follows:

$$\text{Cr Equivalent} = 16.55 + (1.37 \times 0.04) + (1.5 \times 0.06) + (3 \times 0.0008) + (2 \times 0) = 16.7$$

$$\text{Ni Equivalent} = 20.55 + (30 \times 0.009) + (30 \times 0.009) + (0.5 \times 0.007) = 21.1$$

$$\text{Cr equivalent} - \text{Ni equivalent} = 16.7 - 21.1 = -4.4 \text{ within } -5 \text{ to } +7 \text{ of claim 4}$$

$$\text{Cr equivalent/Ni equivalent} = 16.7 / 21.1 = 0.79 \text{ within } 0.7 \text{ to } 1.4 \text{ of claim 5}$$

$$\text{SFE} = 25.7 + (6.2 \times 20.55) + (410 \times 0.009) - (0.9 \times 16.55) - (77 \times 0.009) - (13 \times 0.06) - (1.2 \times 0.007) = 140 \text{ within claimed range of } \geq 100.$$

Note Cr and Ni equivalent equations are disclosed in paragraph [0013] of instant specification.

16. Although cited art does not teach compositional formulas recited by instant claims, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357,553 O.G. 177., 57 USPQ 1 17, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F (2) 878, 1931 C.D. 75.

17. Also in abstract of Allio, steel is use as structural components for light-water nuclear reactor, and therefore meets structural limitation of instant claims 9 to 12.

18. Allio does not teach solution heat treating steel whereas instant claim 7 requires solution heat treatment at 1000°C -1150°C. Nonetheless, it is common practice to solution heat treat analogous austenitic stainless steel for nuclear reactor components at 1050°C to avoid carbide and nitride precipitation as evidenced by Kato in last paragraph on page 5. Since Allio on lines 26 to 44 of column 3 seeks to avoid Cr carbide precipitation then it would obvious for one skilled to also apply solution heat treatment to dissolve precipitation in steel of Allio.

19. Claims 1 to 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 789089 to Yonezawa et al. (hereafter "Yonezawa") in view of US Patent 3,563,728 to Allio et al. (hereafter "Allio").

20. Yonezawa in claim 2 on page 12 teaches an austenitic stainless steel alloy composition having constituents whose wt% ranges overlap those recited by instant claims 1 to 3 as shown in table below; and such overlap in alloy wt% ranges establishes a *prima facie* case of obviousness because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the cited art since the cited art teaches the same utility as the present invention to use as structural components for a nuclear reactor, see MPEP 2144.05 (I).

Element	Instant Claims 1-3 (mass percent)	Yonezawa (mass percent)	Overlap (mass percent)
C	0-0.03	0.005-0.08	0.005-0.08
Si	Si:0.0-0.02		
P	P:0-0.03		0-0.052
S	S:0-0.002		
Si+P+S	Si+P+S: 0-0.052		
Mn	0-0.85	0-0.30	0-0.3
Ni	11-26	25-40	25-26
Cr	25-40	17-30	25-30
Mo	0-3.0	0-3.0	0-3.0
N	0-0.003	-	-
Ca	0-0.001	-	-
Mg	0-0.001	-	-
O	0-0.004	-	-
Zr,B,Hf	0-0.01	B: 0-0.001	B:0-0.001
Fe	balance	balance	balance

21. In regard to claims 2 and 3, Yonezawa steel does not contain N, Ca, Mg, O, Zr, B and Hf and therefore presume either absent or at an inevitable impurity level, and thus closely meet instant claimed wt% ranges having a lower limit of zero and an upper limit of at most 0.01%.

22. In regard to N, Yonezawa does not teach the criticality of restricting N to $\leq 0.003\%$ as taught by present invention. Nonetheless, Allio on lines 45-48 of column 3 discloses an analogous stainless steel with same utility to Yonezawa whereby N is restricted to no more than 0.015% because excessive amounts adversely affects stress corrosion resistance. Similar to Allio, present invention restricts N also to avoid stress corrosion cracking, see paragraph bridging pages 12-13 of instant specification. Since stress corrosion resistance is sought by Yonezawa then it would be an obvious modification well within the skill of the artisan to keep N as low as possible in view of Allio to produce no new and unexpected results.

23. Furthermore, specific examples A1-A3 in table 1 and specific examples B1-B3 in table 3 of Yonezawa closely meet the presently claimed composition except for 30-31% Ni (outside claimed Ni range of 11-26%), 0.08-0.09%Si (outside claimed Si range of 0.02% or less) and no N restriction (claimed N of 0.003% or less). Nonetheless, it would be obvious for one skilled in the art to modify cited examples by reducing Ni and Si concentrations to 25% and 0.02% respectively since a broad Ni range of 25 to 40% and Si+P+S up to 0.2% are taught in the general composition. In regard to N, it is present as an impurity and would obviously be kept as low as possible for the reasons set forth above in paragraph No. 22. Moreover when calculated, examples meet the provisos set forth in claims 1, 4 and 5.

24. For instance, steel example A3 in table 1 comprises 0.03%C - 0.09%Si-0.08%Mn- 0.001%P-0.002%S-30%Ni-29%Cr-1.4%Mo-0.17 Nb+Ta- 0.10%Ti-0.0005%B-Fe balance with N presumed to be 0.01%; and when calculated, satisfies the claimed provisos as follows:

$$\text{Cr Equivalent} = 29 + (1.37 \times 1.4) + (1.5 \times 0.09) + (3 \times 0.1) + (2 \times 0.17) = 31.7$$

$$\text{Ni Equivalent} = 30 + (30 \times 0.03) + (30 \times 0.01) + (0.5 \times 0.08) = 31.24$$

$$\text{Cr equivalent} - \text{Ni equivalent} = 31.7 - 31.24 = 0.46 \text{ within } -5 \text{ to } +7 \text{ of claim 4}$$

$$\text{Cr equivalent/Ni equivalent} = 31.7/31.24 = 1.015 \text{ within } 0.7 \text{ to } 1.4 \text{ of claim 5}$$

Note Cr and Ni equivalent equations are disclosed in paragraph [0013] of instant specification.

$$\text{SFE} = 25.7 + (6.2 \times 30) + (410 \times 0.03) - (0.9 \times 29) - (77 \times 0.01) - (13 \times 0.09) - (1.2 \times 0.08) = 195.864 \text{ within } \geq 100 \text{ of claim 1.}$$

25. Although cited art does not teach compositional equations recited by instant claims, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357,553 O.G. 177., 57 USPQ 1 17, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F (2) 878, 1931 C.D. 75.

26. Also in last paragraph on page 5 of Yonezawa, steel example A3 is subjected to solution heat treatment at 1050°C followed by cold working at about 20% reduction and aging at 700°C for 10 hours or aging at 700°C for 100 hours cold which meets the process limitations set forth by instant claims 7 and 8.

27. Also according to paragraph bridging pages 11 to 12 of Yonezawa, steel is used for structural components for light-water nuclear reactor, and therefore meets structural limitations as set forth by instant claims 9 to 14.

Response to Arguments

28. Applicant's arguments filed March 17, 2011 have been fully considered but they are not persuasive.

29. Applicant contended that instant claims require 0.85% or less Mn, 0.02% or less Si and 0.003% or less N which are narrower in scope compared to European patent 530725 to Kato et al. ("Kato").

30. It is the Examiner's position that in Kato on lines 51-55 on page 3, steel can contain not more than 2% Mn which encompasses and teaches 0.85% or less Mn recited by instant claim. In addition, Kato adds Mn for the same purpose as present invention to increase strength and hardenability. On the other hand, Kato also teaches,

steel can function as a component for nuclear reactor without Mn thereby meeting instant claimed lower Mn limit of zero. Consequently since Applicant has not demonstrated (e.g. by comparative test data) the more narrowly claimed Mn range of 0.85% or less to be somehow critical and productive of new and unexpected then claims would not patentably distinguish over cited art.

31. Moreover, Kato in examples 1, 2 and 6 in table 1 on page 5 contain 0.01% Si (within the presently claimed Si range of 0.02% or less) and 0.0019 to 0.0025% N (within the presently claimed N range of 0.003% or less).

32. Applicant contended that Allio and Yonezawa do not provide examples that meet 0.02% or less Si, 0.85% or less Mn together with stacking fault energy (SFE) at 100 mJ/m² or higher as required by instant claim 1.

33. It is the Examiner's position that Allio discloses an example in table 1 of column 3 that closely meets the presently claimed composition with 0.007% Mn (within instant claimed range of 0-0.85%) and 0.06% Si (slightly higher than instant claimed Si range of 0-0.02% Si) and has a calculated SFE of 140 (within instant claimed SFE of ≥ 100). In regard to Si concentration, it would be obvious for one skilled in the art to modify steel example by lowering Si to 0.02% since a broad range of 0-0.5% with a preferred range of 0-0.05% in claim 4 of column 6 is taught in the general composition. Moreover, since criticality of no more than 0.02% Si has not been demonstrated (e.g. by comparative test data) to be somehow criticality and productive of new and unexpected results then claims would not patentably distinguish over cited art.

34. Moreover, Yonezawa discloses examples A1-A3 in table 1 and examples B1-B3 in table 3 that closely meets the presently claimed composition with 0.08-0.09% Mn (within instant claimed range of 0-0.85%) and 0.08-0.09% Si (slightly higher than instant claimed Si range of 0-0.02% Si) and have a calculated SFE ≥ 100 , see for e.g. steel example A3 calculation in paragraph No. 24 above. In regard to Si concentration, it would be obvious for one skilled in the art to modify steel example by lowering Si to 0.02% since a broad range of at most 0.2% Si+P+S is taught in the general composition. Moreover, Yonezawa on lines 10 to 19 on page 5 teaches Si as an impurity and kept as low as possible because it causes irradiation assisted stress corrosion cracking (IASCC).

35. Applicant contended that neither Allio nor Yonezawa disclose samples of austenitic stainless containing 0.02% or less Si, 0.85% or less Mn, 0.003% or less N, 0.001% or less Ca and 0.001% or less Mg as required by instant claims 2 and 3.

36. In regard to Si and Mn, see explanation above.

37. In regard to N, Allio on lines 45-48 of column 3 teaches a maximum of 0.015% N with example in Table 1 containing 0.009% N. Allio teaches N adversely affects the stress –corrosion resistance in steel and restricted for the same reasons as present invention in paragraph bridging pages 13-14 of instant specification. Therefore it would be obvious for one skill in the art to restrict N as low as possible. Moreover steel of Yonezawa does not contain N and therefore presume to be absent or at an impurity level. Also it would be obvious for one skilled in the art to modify steel of Yonezawa in

view of Allio by restricting N content as low as possible since high stress-corrosion resistance is desired and sought by Yonezawa.

38. In regard to Ca and Mg, they are not disclose by Allio or Yonezawa and therefore presume to be absent or at an unavoidable impurity level.

39. For the foregoing reasons, claims would not patentably distinguish over cited art.

Conclusion

40. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1733

/DY/